

October 24, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laramie Energy - Grand Junction, CO

Sample Delivery Group: L1151275
Samples Received: 10/17/2019
Project Number:
Description: 604-41-32 Release

Report To: Stuart Hall
760 Horizon Dr., Ste. 101
Grand Junction, CO 81506

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	6
Sr: Sample Results	7
20191016-604-41-32-BOT1-12"-1005 L1151275-01	7
20191016-604-41-32-BOT2-12"-1030 L1151275-02	9
20191016-604-41-32-BOT3-12"-1045 L1151275-03	11
20191016-604-41-32-BOT4-12"-1200 L1151275-04	13
20191016-604-41-32-BOT5-12"-1210 L1151275-05	15
20191016-604-41-32-NWALL-8-10"-1100 L1151275-06	17
20191016-604-41-32-EWALL-8-10"-1110 L1151275-07	19
20191016-604-41-32-SWALL-8-10"-1120 L1151275-08	21
20191016-604-41-32-WWALL-8-10"-1145 L1151275-09	23
Qc: Quality Control Summary	25
Wet Chemistry by Method 3060A/7196A	25
Wet Chemistry by Method 9045D	27
Wet Chemistry by Method 9050AMod	29
Mercury by Method 7471A	30
Metals (ICP) by Method 6010B	31
Volatile Organic Compounds (GC) by Method 8015D/GRO	33
Volatile Organic Compounds (GC/MS) by Method 8260B	34
Semi-Volatile Organic Compounds (GC) by Method 8015	36
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	37
Gl: Glossary of Terms	39
Al: Accreditations & Locations	40
Sc: Sample Chain of Custody	41

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



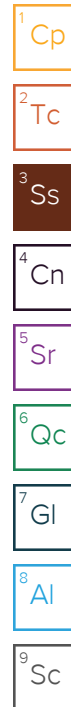
20191016-604-41-32-BOT1-12"-1005 L1151275-01 Solid

Collected by
Chance Holder

Collected date/time
10/10/19 10:05

Received date/time
10/17/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1366143	1	10/22/19 22:46	10/22/19 22:46	CCE	Mt. Juliet, TN
Calculated Results	WG1365724	1	10/19/19 09:54	10/22/19 03:52	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1365825	1	10/19/19 12:01	10/19/19 22:07	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1365179	1	10/18/19 16:00	10/18/19 16:40	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1366677	1	10/21/19 18:03	10/22/19 15:20	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1366596	1	10/21/19 12:15	10/21/19 19:10	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1365724	1	10/19/19 09:54	10/22/19 03:52	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1367567	1	10/18/19 10:46	10/24/19 01:38	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1368379	1	10/18/19 10:46	10/24/19 04:06	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1365898	1	10/19/19 19:35	10/20/19 19:27	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1366230	1	10/20/19 13:27	10/21/19 02:59	BEJ	Mt. Juliet, TN



20191016-604-41-32-BOT2-12"-1030 L1151275-02 Solid

Collected by
Chance Holder

Collected date/time
10/10/19 10:30

Received date/time
10/17/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1366143	1	10/22/19 22:49	10/22/19 22:49	CCE	Mt. Juliet, TN
Calculated Results	WG1365724	1	10/19/19 09:54	10/22/19 03:55	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1365825	1	10/19/19 12:01	10/19/19 22:12	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1365179	1	10/18/19 16:00	10/18/19 16:40	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1366677	1	10/21/19 18:03	10/22/19 15:20	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1366596	1	10/21/19 12:15	10/21/19 19:13	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1365724	1	10/19/19 09:54	10/22/19 03:55	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1367567	1	10/18/19 10:46	10/24/19 02:02	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1368190	1	10/18/19 10:46	10/23/19 19:20	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1365898	1	10/19/19 19:35	10/20/19 20:56	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1366230	1	10/20/19 13:27	10/21/19 03:20	BEJ	Mt. Juliet, TN

20191016-604-41-32-BOT3-12"-1045 L1151275-03 Solid

Collected by
Chance Holder

Collected date/time
10/10/19 10:45

Received date/time
10/17/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1366143	1	10/22/19 22:52	10/22/19 22:52	CCE	Mt. Juliet, TN
Calculated Results	WG1365724	1	10/19/19 09:54	10/22/19 03:18	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1365825	1	10/19/19 12:01	10/19/19 22:12	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1365179	1	10/18/19 16:00	10/18/19 16:40	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1366677	1	10/21/19 18:03	10/22/19 15:20	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1366596	1	10/21/19 12:15	10/21/19 18:57	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1365724	1	10/19/19 09:54	10/22/19 03:18	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1367567	1	10/18/19 10:46	10/24/19 02:26	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1368190	1	10/18/19 10:46	10/23/19 19:41	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1365898	1	10/19/19 19:35	10/20/19 19:40	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1366230	1	10/20/19 13:27	10/21/19 03:41	BEJ	Mt. Juliet, TN

20191016-604-41-32-BOT4-12"-1200 L1151275-04 Solid

Collected by
Chance Holder

Collected date/time
10/10/19 12:00

Received date/time
10/17/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1366143	1	10/22/19 22:55	10/22/19 22:55	CCE	Mt. Juliet, TN
Calculated Results	WG1365724	1	10/19/19 09:54	10/22/19 03:57	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1365825	1	10/19/19 12:01	10/19/19 22:13	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1365179	1	10/18/19 16:00	10/18/19 16:40	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1366677	1	10/21/19 18:03	10/22/19 15:20	BAM	Mt. Juliet, TN

ACCOUNT:

Laramie Energy - Grand Junction, CO

PROJECT:

SDG:

L1151275

DATE/TIME:

10/24/19 15:59

PAGE:

3 of 43

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



20191016-604-41-32-BOT4-12"-1200 L1151275-04 Solid

Collected by
Chance Holder

Collected date/time
10/10/19 12:00

Received date/time
10/17/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7471A	WG1366596	1	10/21/19 12:15	10/21/19 19:15	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1365724	1	10/19/19 09:54	10/22/19 03:57	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1367567	1	10/18/19 10:46	10/24/19 06:02	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1368190	1	10/18/19 10:46	10/23/19 20:02	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1365898	1	10/19/19 19:35	10/21/19 12:34	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1366230	1	10/20/19 13:27	10/21/19 04:01	BEJ	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

20191016-604-41-32-BOT5-12"-1210 L1151275-05 Solid

Collected by
Chance Holder

Collected date/time
10/10/19 12:10

Received date/time
10/17/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1366143	1	10/22/19 22:58	10/22/19 22:58	CCE	Mt. Juliet, TN
Calculated Results	WG1365724	1	10/19/19 09:54	10/22/19 04:00	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1365825	1	10/19/19 12:01	10/19/19 22:14	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1365869	1	10/19/19 14:53	10/19/19 23:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1366677	1	10/21/19 18:03	10/22/19 15:20	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1366596	1	10/21/19 12:15	10/21/19 19:17	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1365724	1	10/19/19 09:54	10/22/19 04:00	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1367567	1	10/19/19 09:45	10/24/19 06:27	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1368190	1	10/19/19 09:45	10/23/19 20:23	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1365898	1	10/19/19 19:35	10/20/19 20:18	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1366230	1	10/20/19 13:27	10/21/19 04:22	BEJ	Mt. Juliet, TN

20191016-604-41-32-NWALL-8-10"-1100 L1151275-06 Solid

Collected by
Chance Holder

Collected date/time
10/10/19 11:00

Received date/time
10/17/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1366143	1	10/22/19 23:00	10/22/19 23:00	CCE	Mt. Juliet, TN
Calculated Results	WG1365724	1	10/19/19 09:54	10/22/19 04:02	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1365825	1	10/19/19 12:01	10/19/19 22:14	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1365869	1	10/19/19 14:53	10/19/19 23:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1366677	1	10/21/19 18:03	10/22/19 15:20	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1366596	1	10/21/19 12:15	10/21/19 19:19	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1365724	1	10/19/19 09:54	10/22/19 04:02	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1367567	1	10/19/19 09:45	10/24/19 06:51	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1368190	1	10/19/19 09:45	10/23/19 20:44	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1365898	1	10/19/19 19:35	10/20/19 21:08	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1366230	1	10/20/19 13:27	10/21/19 04:43	BEJ	Mt. Juliet, TN

20191016-604-41-32-EWALL-8-10"-1110 L1151275-07 Solid

Collected by
Chance Holder

Collected date/time
10/10/19 11:00

Received date/time
10/17/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1366143	1	10/22/19 23:03	10/22/19 23:03	CCE	Mt. Juliet, TN
Calculated Results	WG1365724	1	10/19/19 09:54	10/22/19 04:05	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1366213	1	10/20/19 13:07	10/20/19 23:47	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1365869	1	10/19/19 14:53	10/19/19 23:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1366677	1	10/21/19 18:03	10/22/19 15:20	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1366596	1	10/21/19 12:15	10/21/19 19:21	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1365724	1	10/19/19 09:54	10/22/19 04:05	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1367567	1	10/19/19 09:45	10/24/19 07:15	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1368190	1	10/19/19 09:45	10/23/19 21:05	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1365898	1	10/19/19 19:35	10/20/19 19:14	KME	Mt. Juliet, TN

ACCOUNT:

Laramie Energy - Grand Junction, CO

PROJECT:

SDG:

L1151275

DATE/TIME:

10/24/19 15:59

PAGE:

4 of 43

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



20191016-604-41-32-EWALL-8-10"-1110 L1151275-07 Solid

Collected by
Chance Holder

Collected date/time
10/10/19 11:00

Received date/time
10/17/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1366230	1	10/20/19 13:27	10/21/19 05:04	BEJ	Mt. Juliet, TN

¹Cp

²Tc

³Ss

20191016-604-41-32-SWALL-8-10"-1120 L1151275-08 Solid

Collected by
Chance Holder

Collected date/time
10/10/19 11:20

Received date/time
10/17/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1366143	1	10/22/19 23:06	10/22/19 23:06	CCE	Mt. Juliet, TN
Calculated Results	WG1365724	1	10/19/19 09:54	10/22/19 04:25	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1366213	1	10/20/19 13:07	10/20/19 23:49	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1365869	1	10/19/19 14:53	10/19/19 23:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1366677	1	10/21/19 18:03	10/22/19 15:20	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1366596	1	10/21/19 12:15	10/21/19 19:24	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1365724	1	10/19/19 09:54	10/22/19 04:25	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1367567	1	10/19/19 09:45	10/24/19 07:39	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1368190	1	10/19/19 09:45	10/23/19 21:26	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1365898	1	10/19/19 19:35	10/20/19 20:05	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1366230	1	10/20/19 13:27	10/21/19 05:24	BEJ	Mt. Juliet, TN

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

20191016-604-41-32-WWALL-8-10"-1145 L1151275-09 Solid

Collected by
Chance Holder

Collected date/time
10/10/19 11:45

Received date/time
10/17/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1366143	1	10/22/19 23:09	10/22/19 23:09	CCE	Mt. Juliet, TN
Calculated Results	WG1365724	1	10/19/19 09:54	10/22/19 04:28	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1366213	1	10/20/19 13:07	10/20/19 23:50	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1365869	1	10/19/19 14:53	10/19/19 23:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1366677	1	10/21/19 18:03	10/22/19 15:20	BAM	Mt. Juliet, TN
Mercury by Method 7471A	WG1366596	1	10/21/19 12:15	10/21/19 19:32	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1365724	1	10/19/19 09:54	10/22/19 04:28	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1367567	1	10/19/19 09:45	10/24/19 08:03	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1368190	1	10/19/19 09:45	10/23/19 21:46	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1365898	1	10/19/19 19:35	10/20/19 20:30	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1366230	1	10/20/19 13:27	10/21/19 05:45	BEJ	Mt. Juliet, TN

ACCOUNT:

Laramie Energy - Grand Junction, CO

PROJECT:

SDG:

L1151275

DATE/TIME:

10/24/19 15:59

PAGE:

5 of 43



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris Ward
Project Manager

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Collected date/time: 10/10/19 10:05

L1151275

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.716		1	10/22/2019 22:46	WG1366143

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Trivalent	42.3		1.00	1	10/22/2019 03:52	WG1365724

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND	J6	2.00	1	10/19/2019 22:07	WG1365825

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.41	T8	1	10/18/2019 16:40	WG1365179

Sample Narrative:

L1151275-01 WG1365179: 8.41 at 18.7C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	266		10.0	1	10/22/2019 15:20	WG1366677

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	10/21/2019 19:10	WG1366596

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	2.36		2.00	1	10/22/2019 03:52	WG1365724
Barium	835		0.500	1	10/22/2019 03:52	WG1365724
Cadmium	ND		0.500	1	10/22/2019 03:52	WG1365724
Chromium	42.3		1.00	1	10/22/2019 03:52	WG1365724
Copper	18.9		2.00	1	10/22/2019 03:52	WG1365724
Lead	13.2		0.500	1	10/22/2019 03:52	WG1365724
Nickel	27.7		2.00	1	10/22/2019 03:52	WG1365724
Selenium	ND		2.00	1	10/22/2019 03:52	WG1365724
Silver	ND		1.00	1	10/22/2019 03:52	WG1365724
Zinc	61.0		5.00	1	10/22/2019 03:52	WG1365724

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/24/2019 01:38	WG1367567
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	96.0		77.0-120		10/24/2019 01:38	WG1367567



Collected date/time: 10/10/19 10:05

L1151275

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RD mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/24/2019 04:06	WG1368379
Toluene	ND		0.00500	1	10/24/2019 04:06	WG1368379
Ethylbenzene	ND		0.00250	1	10/24/2019 04:06	WG1368379
Total Xylenes	ND		0.00650	1	10/24/2019 04:06	WG1368379
Methyl tert-butyl ether	ND		0.00100	1	10/24/2019 04:06	WG1368379
(S) Toluene-d8	101		75.0-131		10/24/2019 04:06	WG1368379
(S) 4-Bromofluorobenzene	88.4		67.0-138		10/24/2019 04:06	WG1368379
(S) 1,2-Dichloroethane-d4	111		70.0-130		10/24/2019 04:06	WG1368379

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RD mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	15.1		4.00	1	10/20/2019 19:27	WG1365898
(S) o-Terphenyl	67.0		18.0-148		10/20/2019 19:27	WG1365898

6 Qc

7 Gl

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RD mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2019 02:59	WG1366230
Acenaphthene	ND		0.00600	1	10/21/2019 02:59	WG1366230
Acenaphthylene	ND		0.00600	1	10/21/2019 02:59	WG1366230
Benzo(a)anthracene	ND		0.00600	1	10/21/2019 02:59	WG1366230
Benzo(a)pyrene	ND		0.00600	1	10/21/2019 02:59	WG1366230
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2019 02:59	WG1366230
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2019 02:59	WG1366230
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2019 02:59	WG1366230
Chrysene	ND		0.00600	1	10/21/2019 02:59	WG1366230
Dibenz(a,h)anthracene	ND		0.00600	1	10/21/2019 02:59	WG1366230
Fluoranthene	ND		0.00600	1	10/21/2019 02:59	WG1366230
Fluorene	ND		0.00600	1	10/21/2019 02:59	WG1366230
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2019 02:59	WG1366230
Naphthalene	ND		0.0200	1	10/21/2019 02:59	WG1366230
Phenanthrene	ND		0.00600	1	10/21/2019 02:59	WG1366230
Pyrene	ND		0.00600	1	10/21/2019 02:59	WG1366230
1-Methylnaphthalene	ND		0.0200	1	10/21/2019 02:59	WG1366230
2-Methylnaphthalene	ND		0.0200	1	10/21/2019 02:59	WG1366230
2-Chloronaphthalene	ND		0.0200	1	10/21/2019 02:59	WG1366230
(S) p-Terphenyl-d14	71.9		23.0-120		10/21/2019 02:59	WG1366230
(S) Nitrobenzene-d5	69.9		14.0-149		10/21/2019 02:59	WG1366230
(S) 2-Fluorobiphenyl	69.7		34.0-125		10/21/2019 02:59	WG1366230

8 Al

9 Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.93		1	10/22/2019 22:49	WG1366143

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Trivalent	28.5		1.00	1	10/22/2019 03:55	WG1365724

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	10/19/2019 22:12	WG1365825

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.53	T8	1	10/18/2019 16:40	WG1365179

Sample Narrative:

L1151275-02 WG1365179: 8.53 at 18.8C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	244		10.0	1	10/22/2019 15:20	WG1366677

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	10/21/2019 19:13	WG1366596

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	4.29		2.00	1	10/22/2019 03:55	WG1365724
Barium	307		0.500	1	10/22/2019 03:55	WG1365724
Cadmium	ND		0.500	1	10/22/2019 03:55	WG1365724
Chromium	28.5		1.00	1	10/22/2019 03:55	WG1365724
Copper	12.6		2.00	1	10/22/2019 03:55	WG1365724
Lead	9.78		0.500	1	10/22/2019 03:55	WG1365724
Nickel	18.0		2.00	1	10/22/2019 03:55	WG1365724
Selenium	ND		2.00	1	10/22/2019 03:55	WG1365724
Silver	ND		1.00	1	10/22/2019 03:55	WG1365724
Zinc	40.7		5.00	1	10/22/2019 03:55	WG1365724

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/24/2019 02:02	WG1367567
(S) a,a,a-Trifluorotoluene(FID)	93.4		77.0-120		10/24/2019 02:02	WG1367567

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc



Collected date/time: 10/10/19 10:30

L1151275

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/23/2019 19:20	WG1368190
Toluene	ND		0.00500	1	10/23/2019 19:20	WG1368190
Ethylbenzene	ND		0.00250	1	10/23/2019 19:20	WG1368190
Total Xylenes	ND		0.00650	1	10/23/2019 19:20	WG1368190
Methyl tert-butyl ether	ND		0.00100	1	10/23/2019 19:20	WG1368190
(S) Toluene-d8	106		75.0-131		10/23/2019 19:20	WG1368190
(S) 4-Bromofluorobenzene	98.2		67.0-138		10/23/2019 19:20	WG1368190
(S) 1,2-Dichloroethane-d4	99.4		70.0-130		10/23/2019 19:20	WG1368190

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	38.2		4.00	1	10/20/2019 20:56	WG1365898
(S) o-Terphenyl	54.7		18.0-148		10/20/2019 20:56	WG1365898

6 Qc

7 Gl

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2019 03:20	WG1366230
Acenaphthene	ND		0.00600	1	10/21/2019 03:20	WG1366230
Acenaphthylene	ND		0.00600	1	10/21/2019 03:20	WG1366230
Benzo(a)anthracene	ND		0.00600	1	10/21/2019 03:20	WG1366230
Benzo(a)pyrene	ND		0.00600	1	10/21/2019 03:20	WG1366230
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2019 03:20	WG1366230
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2019 03:20	WG1366230
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2019 03:20	WG1366230
Chrysene	ND		0.00600	1	10/21/2019 03:20	WG1366230
Dibenz(a,h)anthracene	ND		0.00600	1	10/21/2019 03:20	WG1366230
Fluoranthene	ND		0.00600	1	10/21/2019 03:20	WG1366230
Fluorene	ND		0.00600	1	10/21/2019 03:20	WG1366230
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2019 03:20	WG1366230
Naphthalene	ND		0.0200	1	10/21/2019 03:20	WG1366230
Phenanthrene	ND		0.00600	1	10/21/2019 03:20	WG1366230
Pyrene	ND		0.00600	1	10/21/2019 03:20	WG1366230
1-Methylnaphthalene	ND		0.0200	1	10/21/2019 03:20	WG1366230
2-Methylnaphthalene	ND		0.0200	1	10/21/2019 03:20	WG1366230
2-Chloronaphthalene	ND		0.0200	1	10/21/2019 03:20	WG1366230
(S) p-Terphenyl-d14	77.8		23.0-120		10/21/2019 03:20	WG1366230
(S) Nitrobenzene-d5	79.1		14.0-149		10/21/2019 03:20	WG1366230
(S) 2-Fluorobiphenyl	73.8		34.0-125		10/21/2019 03:20	WG1366230

8 Al

9 Sc



Collected date/time: 10/10/19 10:45

L1151275

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.62		1	10/22/2019 22:52	WG1366143

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	54.0		1.00	1	10/22/2019 03:18	WG1365724

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	10/19/2019 22:12	WG1365825

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.33	T8	1	10/18/2019 16:40	WG1365179

Sample Narrative:

L1151275-03 WG1365179: 8.33 at 19.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	350		10.0	1	10/22/2019 15:20	WG1366677

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	10/21/2019 18:57	WG1366596

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.56		2.00	1	10/22/2019 03:18	WG1365724
Barium	242	Q1	0.500	1	10/22/2019 03:18	WG1365724
Cadmium	ND		0.500	1	10/22/2019 03:18	WG1365724
Chromium	54.0	Q1	1.00	1	10/22/2019 03:18	WG1365724
Copper	12.3		2.00	1	10/22/2019 03:18	WG1365724
Lead	9.66	Q1	0.500	1	10/22/2019 03:18	WG1365724
Nickel	25.7		2.00	1	10/22/2019 03:18	WG1365724
Selenium	ND		2.00	1	10/22/2019 03:18	WG1365724
Silver	ND		1.00	1	10/22/2019 03:18	WG1365724
Zinc	40.1	Q1	5.00	1	10/22/2019 03:18	WG1365724

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/24/2019 02:26	WG1367567
(S) a, a, a-Trifluorotoluene(FID)	95.6		77.0-120		10/24/2019 02:26	WG1367567



Collected date/time: 10/10/19 10:45

L1151275

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RD mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/23/2019 19:41	WG1368190
Toluene	ND		0.00500	1	10/23/2019 19:41	WG1368190
Ethylbenzene	ND		0.00250	1	10/23/2019 19:41	WG1368190
Total Xylenes	ND		0.00650	1	10/23/2019 19:41	WG1368190
Methyl tert-butyl ether	ND		0.00100	1	10/23/2019 19:41	WG1368190
(S) Toluene-d8	106		75.0-131		10/23/2019 19:41	WG1368190
(S) 4-Bromofluorobenzene	99.1		67.0-138		10/23/2019 19:41	WG1368190
(S) 1,2-Dichloroethane-d4	104		70.0-130		10/23/2019 19:41	WG1368190

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RD mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	169		4.00	1	10/20/2019 19:40	WG1365898
(S) o-Terphenyl	61.6		18.0-148		10/20/2019 19:40	WG1365898

6 Qc

7 Gl

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RD mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2019 03:41	WG1366230
Acenaphthene	ND		0.00600	1	10/21/2019 03:41	WG1366230
Acenaphthylene	ND		0.00600	1	10/21/2019 03:41	WG1366230
Benzo(a)anthracene	ND		0.00600	1	10/21/2019 03:41	WG1366230
Benzo(a)pyrene	ND		0.00600	1	10/21/2019 03:41	WG1366230
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2019 03:41	WG1366230
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2019 03:41	WG1366230
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2019 03:41	WG1366230
Chrysene	ND		0.00600	1	10/21/2019 03:41	WG1366230
Dibenz(a,h)anthracene	ND		0.00600	1	10/21/2019 03:41	WG1366230
Fluoranthene	ND		0.00600	1	10/21/2019 03:41	WG1366230
Fluorene	ND		0.00600	1	10/21/2019 03:41	WG1366230
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2019 03:41	WG1366230
Naphthalene	ND		0.0200	1	10/21/2019 03:41	WG1366230
Phenanthrene	ND		0.00600	1	10/21/2019 03:41	WG1366230
Pyrene	ND		0.00600	1	10/21/2019 03:41	WG1366230
1-Methylnaphthalene	ND		0.0200	1	10/21/2019 03:41	WG1366230
2-Methylnaphthalene	ND		0.0200	1	10/21/2019 03:41	WG1366230
2-Chloronaphthalene	ND		0.0200	1	10/21/2019 03:41	WG1366230
(S) p-Terphenyl-d14	97.2		23.0-120		10/21/2019 03:41	WG1366230
(S) Nitrobenzene-d5	90.8		14.0-149		10/21/2019 03:41	WG1366230
(S) 2-Fluorobiphenyl	82.7		34.0-125		10/21/2019 03:41	WG1366230

8 Al

9 Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.51		1	10/22/2019 22:55	WG1366143

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	27.6		1.00	1	10/22/2019 03:57	WG1365724

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	10/19/2019 22:13	WG1365825

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.39	T8	1	10/18/2019 16:40	WG1365179

Sample Narrative:

L1151275-04 WG1365179: 8.39 at 18.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	272		10.0	1	10/22/2019 15:20	WG1366677

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	10/21/2019 19:15	WG1366596

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	ND		2.00	1	10/22/2019 03:57	WG1365724
Barium	206		0.500	1	10/22/2019 03:57	WG1365724
Cadmium	ND		0.500	1	10/22/2019 03:57	WG1365724
Chromium	27.6		1.00	1	10/22/2019 03:57	WG1365724
Copper	12.4		2.00	1	10/22/2019 03:57	WG1365724
Lead	9.02		0.500	1	10/22/2019 03:57	WG1365724
Nickel	18.5		2.00	1	10/22/2019 03:57	WG1365724
Selenium	ND		2.00	1	10/22/2019 03:57	WG1365724
Silver	ND		1.00	1	10/22/2019 03:57	WG1365724
Zinc	44.2		5.00	1	10/22/2019 03:57	WG1365724

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/24/2019 06:02	WG1367567
(S) <i>a, a, a</i> -Trifluorotoluene(FID)	95.9		77.0-120		10/24/2019 06:02	WG1367567

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Collected date/time: 10/10/19 12:00

L1151275

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RD mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/23/2019 20:02	WG1368190
Toluene	ND		0.00500	1	10/23/2019 20:02	WG1368190
Ethylbenzene	ND		0.00250	1	10/23/2019 20:02	WG1368190
Total Xylenes	ND		0.00650	1	10/23/2019 20:02	WG1368190
Methyl tert-butyl ether	ND		0.00100	1	10/23/2019 20:02	WG1368190
(S) Toluene-d8	104		75.0-131		10/23/2019 20:02	WG1368190
(S) 4-Bromofluorobenzene	96.1		67.0-138		10/23/2019 20:02	WG1368190
(S) 1,2-Dichloroethane-d4	100		70.0-130		10/23/2019 20:02	WG1368190

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RD mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	5.88		4.00	1	10/21/2019 12:34	WG1365898
(S) o-Terphenyl	57.2		18.0-148		10/21/2019 12:34	WG1365898

6 Qc

7 Gl

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RD mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2019 04:01	WG1366230
Acenaphthene	ND		0.00600	1	10/21/2019 04:01	WG1366230
Acenaphthylene	ND		0.00600	1	10/21/2019 04:01	WG1366230
Benzo(a)anthracene	ND		0.00600	1	10/21/2019 04:01	WG1366230
Benzo(a)pyrene	ND		0.00600	1	10/21/2019 04:01	WG1366230
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2019 04:01	WG1366230
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2019 04:01	WG1366230
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2019 04:01	WG1366230
Chrysene	ND		0.00600	1	10/21/2019 04:01	WG1366230
Dibenz(a,h)anthracene	ND		0.00600	1	10/21/2019 04:01	WG1366230
Fluoranthene	ND		0.00600	1	10/21/2019 04:01	WG1366230
Fluorene	ND		0.00600	1	10/21/2019 04:01	WG1366230
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2019 04:01	WG1366230
Naphthalene	ND		0.0200	1	10/21/2019 04:01	WG1366230
Phenanthrene	ND		0.00600	1	10/21/2019 04:01	WG1366230
Pyrene	ND		0.00600	1	10/21/2019 04:01	WG1366230
1-Methylnaphthalene	ND		0.0200	1	10/21/2019 04:01	WG1366230
2-Methylnaphthalene	ND		0.0200	1	10/21/2019 04:01	WG1366230
2-Chloronaphthalene	ND		0.0200	1	10/21/2019 04:01	WG1366230
(S) p-Terphenyl-d14	86.8		23.0-120		10/21/2019 04:01	WG1366230
(S) Nitrobenzene-d5	82.6		14.0-149		10/21/2019 04:01	WG1366230
(S) 2-Fluorobiphenyl	77.8		34.0-125		10/21/2019 04:01	WG1366230

8 Al

9 Sc



Collected date/time: 10/10/19 12:10

L1151275

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.89		1	10/22/2019 22:58	WG1366143

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	32.1		1.00	1	10/22/2019 04:00	WG1365724

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	10/19/2019 22:14	WG1365825

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.32	T8	1	10/19/2019 23:00	WG1365869

Sample Narrative:

L1151275-05 WG1365869: 8.32 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1060		10.0	1	10/22/2019 15:20	WG1366677

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	10/21/2019 19:17	WG1366596

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.17		2.00	1	10/22/2019 04:00	WG1365724
Barium	687		0.500	1	10/22/2019 04:00	WG1365724
Cadmium	0.528		0.500	1	10/22/2019 04:00	WG1365724
Chromium	32.1		1.00	1	10/22/2019 04:00	WG1365724
Copper	22.2		2.00	1	10/22/2019 04:00	WG1365724
Lead	12.2		0.500	1	10/22/2019 04:00	WG1365724
Nickel	23.5		2.00	1	10/22/2019 04:00	WG1365724
Selenium	ND		2.00	1	10/22/2019 04:00	WG1365724
Silver	ND		1.00	1	10/22/2019 04:00	WG1365724
Zinc	55.5		5.00	1	10/22/2019 04:00	WG1365724

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/24/2019 06:27	WG1367567
(S) a,a,a-Trifluorotoluene(FID)	94.0		77.0-120		10/24/2019 06:27	WG1367567



Collected date/time: 10/10/19 12:10

L1151275

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/23/2019 20:23	WG1368190
Toluene	ND		0.00500	1	10/23/2019 20:23	WG1368190
Ethylbenzene	ND		0.00250	1	10/23/2019 20:23	WG1368190
Total Xylenes	ND		0.00650	1	10/23/2019 20:23	WG1368190
Methyl tert-butyl ether	ND		0.00100	1	10/23/2019 20:23	WG1368190
(S) Toluene-d8	107		75.0-131		10/23/2019 20:23	WG1368190
(S) 4-Bromofluorobenzene	100		67.0-138		10/23/2019 20:23	WG1368190
(S) 1,2-Dichloroethane-d4	97.8		70.0-130		10/23/2019 20:23	WG1368190

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	75.7		4.00	1	10/20/2019 20:18	WG1365898
(S) o-Terphenyl	66.0		18.0-148		10/20/2019 20:18	WG1365898

6 Qc

7 Gl

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2019 04:22	WG1366230
Acenaphthene	ND		0.00600	1	10/21/2019 04:22	WG1366230
Acenaphthylene	ND		0.00600	1	10/21/2019 04:22	WG1366230
Benzo(a)anthracene	ND		0.00600	1	10/21/2019 04:22	WG1366230
Benzo(a)pyrene	ND		0.00600	1	10/21/2019 04:22	WG1366230
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2019 04:22	WG1366230
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2019 04:22	WG1366230
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2019 04:22	WG1366230
Chrysene	ND		0.00600	1	10/21/2019 04:22	WG1366230
Dibenz(a,h)anthracene	ND		0.00600	1	10/21/2019 04:22	WG1366230
Fluoranthene	ND		0.00600	1	10/21/2019 04:22	WG1366230
Fluorene	ND		0.00600	1	10/21/2019 04:22	WG1366230
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2019 04:22	WG1366230
Naphthalene	ND		0.0200	1	10/21/2019 04:22	WG1366230
Phenanthrene	0.0128		0.00600	1	10/21/2019 04:22	WG1366230
Pyrene	0.00674		0.00600	1	10/21/2019 04:22	WG1366230
1-Methylnaphthalene	ND		0.0200	1	10/21/2019 04:22	WG1366230
2-Methylnaphthalene	0.0367		0.0200	1	10/21/2019 04:22	WG1366230
2-Chloronaphthalene	ND		0.0200	1	10/21/2019 04:22	WG1366230
(S) p-Terphenyl-d14	88.3		23.0-120		10/21/2019 04:22	WG1366230
(S) Nitrobenzene-d5	83.0		14.0-149		10/21/2019 04:22	WG1366230
(S) 2-Fluorobiphenyl	79.1		34.0-125		10/21/2019 04:22	WG1366230

8 Al

9 Sc



Collected date/time: 10/10/19 11:00

L1151275

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	7.59		1	10/22/2019 23:00	WG1366143

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	19.2		1.00	1	10/22/2019 04:02	WG1365724

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	10/19/2019 22:14	WG1365825

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.64	T8	1	10/19/2019 23:00	WG1365869

Sample Narrative:

L1151275-06 WG1365869: 8.64 at 21.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	902		10.0	1	10/22/2019 15:20	WG1366677

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	10/21/2019 19:19	WG1366596

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.24		2.00	1	10/22/2019 04:02	WG1365724
Barium	240		0.500	1	10/22/2019 04:02	WG1365724
Cadmium	ND		0.500	1	10/22/2019 04:02	WG1365724
Chromium	19.2		1.00	1	10/22/2019 04:02	WG1365724
Copper	10.3		2.00	1	10/22/2019 04:02	WG1365724
Lead	7.46		0.500	1	10/22/2019 04:02	WG1365724
Nickel	13.2		2.00	1	10/22/2019 04:02	WG1365724
Selenium	ND		2.00	1	10/22/2019 04:02	WG1365724
Silver	ND		1.00	1	10/22/2019 04:02	WG1365724
Zinc	37.0		5.00	1	10/22/2019 04:02	WG1365724

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/24/2019 06:51	WG1367567
(S) a,a,a-Trifluorotoluene(FID)	94.2		77.0-120		10/24/2019 06:51	WG1367567



Collected date/time: 10/10/19 11:00

L1151275

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RD mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/23/2019 20:44	WG1368190
Toluene	ND		0.00500	1	10/23/2019 20:44	WG1368190
Ethylbenzene	ND		0.00250	1	10/23/2019 20:44	WG1368190
Total Xylenes	ND		0.00650	1	10/23/2019 20:44	WG1368190
Methyl tert-butyl ether	ND		0.00100	1	10/23/2019 20:44	WG1368190
(S) Toluene-d8	103		75.0-131		10/23/2019 20:44	WG1368190
(S) 4-Bromofluorobenzene	96.6		67.0-138		10/23/2019 20:44	WG1368190
(S) 1,2-Dichloroethane-d4	99.8		70.0-130		10/23/2019 20:44	WG1368190

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RD mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	61.1		4.00	1	10/20/2019 21:08	WG1365898
(S) o-Terphenyl	64.3		18.0-148		10/20/2019 21:08	WG1365898

6 Qc

7 Gl

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RD mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2019 04:43	WG1366230
Acenaphthene	ND		0.00600	1	10/21/2019 04:43	WG1366230
Acenaphthylene	ND		0.00600	1	10/21/2019 04:43	WG1366230
Benzo(a)anthracene	ND		0.00600	1	10/21/2019 04:43	WG1366230
Benzo(a)pyrene	ND		0.00600	1	10/21/2019 04:43	WG1366230
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2019 04:43	WG1366230
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2019 04:43	WG1366230
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2019 04:43	WG1366230
Chrysene	ND		0.00600	1	10/21/2019 04:43	WG1366230
Dibenz(a,h)anthracene	ND		0.00600	1	10/21/2019 04:43	WG1366230
Fluoranthene	ND		0.00600	1	10/21/2019 04:43	WG1366230
Fluorene	ND		0.00600	1	10/21/2019 04:43	WG1366230
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2019 04:43	WG1366230
Naphthalene	ND		0.0200	1	10/21/2019 04:43	WG1366230
Phenanthrene	ND		0.00600	1	10/21/2019 04:43	WG1366230
Pyrene	ND		0.00600	1	10/21/2019 04:43	WG1366230
1-Methylnaphthalene	ND		0.0200	1	10/21/2019 04:43	WG1366230
2-Methylnaphthalene	ND		0.0200	1	10/21/2019 04:43	WG1366230
2-Chloronaphthalene	ND		0.0200	1	10/21/2019 04:43	WG1366230
(S) p-Terphenyl-d14	81.9		23.0-120		10/21/2019 04:43	WG1366230
(S) Nitrobenzene-d5	71.6		14.0-149		10/21/2019 04:43	WG1366230
(S) 2-Fluorobiphenyl	70.6		34.0-125		10/21/2019 04:43	WG1366230

8 Al

9 Sc



Collected date/time: 10/10/19 11:00

L1151275

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.352		1	10/22/2019 23:03	WG1366143

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Trivalent	35.2		1.00	1	10/22/2019 04:05	WG1365724

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	10/20/2019 23:47	WG1366213

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.29	T8	1	10/19/2019 23:00	WG1365869

Sample Narrative:

L1151275-07 WG1365869: 8.29 at 21C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	232		10.0	1	10/22/2019 15:20	WG1366677

Mercury by Method 7471A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	10/21/2019 19:21	WG1366596

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	ND		2.00	1	10/22/2019 04:05	WG1365724
Barium	697		0.500	1	10/22/2019 04:05	WG1365724
Cadmium	ND		0.500	1	10/22/2019 04:05	WG1365724
Chromium	35.2		1.00	1	10/22/2019 04:05	WG1365724
Copper	18.9		2.00	1	10/22/2019 04:05	WG1365724
Lead	12.8		0.500	1	10/22/2019 04:05	WG1365724
Nickel	24.6		2.00	1	10/22/2019 04:05	WG1365724
Selenium	ND		2.00	1	10/22/2019 04:05	WG1365724
Silver	ND		1.00	1	10/22/2019 04:05	WG1365724
Zinc	53.7		5.00	1	10/22/2019 04:05	WG1365724

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/24/2019 07:15	WG1367567
(S) <i>a, a, a</i> -Trifluorotoluene(FID)	94.9		77.0-120		10/24/2019 07:15	WG1367567



Collected date/time: 10/10/19 11:00

L1151275

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/23/2019 21:05	WG1368190
Toluene	ND		0.00500	1	10/23/2019 21:05	WG1368190
Ethylbenzene	ND		0.00250	1	10/23/2019 21:05	WG1368190
Total Xylenes	ND		0.00650	1	10/23/2019 21:05	WG1368190
Methyl tert-butyl ether	ND		0.00100	1	10/23/2019 21:05	WG1368190
(S) Toluene-d8	104		75.0-131		10/23/2019 21:05	WG1368190
(S) 4-Bromofluorobenzene	97.5		67.0-138		10/23/2019 21:05	WG1368190
(S) 1,2-Dichloroethane-d4	95.6		70.0-130		10/23/2019 21:05	WG1368190

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	6.69		4.00	1	10/20/2019 19:14	WG1365898
(S) o-Terphenyl	54.6		18.0-148		10/20/2019 19:14	WG1365898

6 Qc

7 Gl

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2019 05:04	WG1366230
Acenaphthene	ND		0.00600	1	10/21/2019 05:04	WG1366230
Acenaphthylene	ND		0.00600	1	10/21/2019 05:04	WG1366230
Benzo(a)anthracene	ND		0.00600	1	10/21/2019 05:04	WG1366230
Benzo(a)pyrene	ND		0.00600	1	10/21/2019 05:04	WG1366230
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2019 05:04	WG1366230
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2019 05:04	WG1366230
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2019 05:04	WG1366230
Chrysene	ND		0.00600	1	10/21/2019 05:04	WG1366230
Dibenz(a,h)anthracene	ND		0.00600	1	10/21/2019 05:04	WG1366230
Fluoranthene	ND		0.00600	1	10/21/2019 05:04	WG1366230
Fluorene	ND		0.00600	1	10/21/2019 05:04	WG1366230
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2019 05:04	WG1366230
Naphthalene	ND		0.0200	1	10/21/2019 05:04	WG1366230
Phenanthrene	ND		0.00600	1	10/21/2019 05:04	WG1366230
Pyrene	ND		0.00600	1	10/21/2019 05:04	WG1366230
1-Methylnaphthalene	ND		0.0200	1	10/21/2019 05:04	WG1366230
2-Methylnaphthalene	ND		0.0200	1	10/21/2019 05:04	WG1366230
2-Chloronaphthalene	ND		0.0200	1	10/21/2019 05:04	WG1366230
(S) p-Terphenyl-d14	75.8		23.0-120		10/21/2019 05:04	WG1366230
(S) Nitrobenzene-d5	79.9		14.0-149		10/21/2019 05:04	WG1366230
(S) 2-Fluorobiphenyl	73.4		34.0-125		10/21/2019 05:04	WG1366230

8 Al

9 Sc



Collected date/time: 10/10/19 11:20

L1151275

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.30		1	10/22/2019 23:06	WG1366143

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	12.1		1.00	1	10/22/2019 04:25	WG1365724

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	10/20/2019 23:49	WG1366213

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	9.14	T8	1	10/19/2019 23:00	WG1365869

Sample Narrative:

L1151275-08 WG1365869: 9.14 at 20.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	358		10.0	1	10/22/2019 15:20	WG1366677

Mercury by Method 7471A

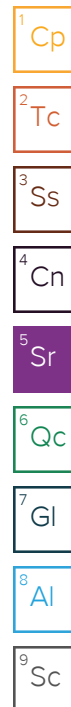
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	10/21/2019 19:24	WG1366596

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.64		2.00	1	10/22/2019 04:25	WG1365724
Barium	198		0.500	1	10/22/2019 04:25	WG1365724
Cadmium	ND		0.500	1	10/22/2019 04:25	WG1365724
Chromium	12.1		1.00	1	10/22/2019 04:25	WG1365724
Copper	9.56		2.00	1	10/22/2019 04:25	WG1365724
Lead	5.94		0.500	1	10/22/2019 04:25	WG1365724
Nickel	11.4		2.00	1	10/22/2019 04:25	WG1365724
Selenium	ND		2.00	1	10/22/2019 04:25	WG1365724
Silver	ND		1.00	1	10/22/2019 04:25	WG1365724
Zinc	30.4		5.00	1	10/22/2019 04:25	WG1365724

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/24/2019 07:39	WG1367567
(S) a, a, a-Trifluorotoluene(FID)	92.8		77.0-120		10/24/2019 07:39	WG1367567





Collected date/time: 10/10/19 11:20

L1151275

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RD mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/23/2019 21:26	WG1368190
Toluene	ND		0.00500	1	10/23/2019 21:26	WG1368190
Ethylbenzene	ND		0.00250	1	10/23/2019 21:26	WG1368190
Total Xylenes	ND		0.00650	1	10/23/2019 21:26	WG1368190
Methyl tert-butyl ether	ND		0.00100	1	10/23/2019 21:26	WG1368190
(S) Toluene-d8	102		75.0-131		10/23/2019 21:26	WG1368190
(S) 4-Bromofluorobenzene	93.7		67.0-138		10/23/2019 21:26	WG1368190
(S) 1,2-Dichloroethane-d4	99.9		70.0-130		10/23/2019 21:26	WG1368190

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RD mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	52.6		4.00	1	10/20/2019 20:05	WG1365898
(S) o-Terphenyl	50.0		18.0-148		10/20/2019 20:05	WG1365898

6 Qc

7 Gl

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RD mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2019 05:24	WG1366230
Acenaphthene	ND		0.00600	1	10/21/2019 05:24	WG1366230
Acenaphthylene	ND		0.00600	1	10/21/2019 05:24	WG1366230
Benzo(a)anthracene	ND		0.00600	1	10/21/2019 05:24	WG1366230
Benzo(a)pyrene	ND		0.00600	1	10/21/2019 05:24	WG1366230
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2019 05:24	WG1366230
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2019 05:24	WG1366230
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2019 05:24	WG1366230
Chrysene	ND		0.00600	1	10/21/2019 05:24	WG1366230
Dibenz(a,h)anthracene	ND		0.00600	1	10/21/2019 05:24	WG1366230
Fluoranthene	ND		0.00600	1	10/21/2019 05:24	WG1366230
Fluorene	ND		0.00600	1	10/21/2019 05:24	WG1366230
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2019 05:24	WG1366230
Naphthalene	ND		0.0200	1	10/21/2019 05:24	WG1366230
Phenanthrene	0.0109		0.00600	1	10/21/2019 05:24	WG1366230
Pyrene	0.00640		0.00600	1	10/21/2019 05:24	WG1366230
1-Methylnaphthalene	ND		0.0200	1	10/21/2019 05:24	WG1366230
2-Methylnaphthalene	ND		0.0200	1	10/21/2019 05:24	WG1366230
2-Chloronaphthalene	ND		0.0200	1	10/21/2019 05:24	WG1366230
(S) p-Terphenyl-d14	81.4		23.0-120		10/21/2019 05:24	WG1366230
(S) Nitrobenzene-d5	76.5		14.0-149		10/21/2019 05:24	WG1366230
(S) 2-Fluorobiphenyl	73.6		34.0-125		10/21/2019 05:24	WG1366230

8 Al

9 Sc



Collected date/time: 10/10/19 11:45

L1151275

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	6.98		1	10/22/2019 23:09	WG1366143

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	37.4		1.00	1	10/22/2019 04:28	WG1365724

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	10/20/2019 23:50	WG1366213

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.43	T8	1	10/19/2019 23:00	WG1365869

Sample Narrative:

L1151275-09 WG1365869: 8.43 at 20.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	831		10.0	1	10/22/2019 15:20	WG1366677

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	10/21/2019 19:32	WG1366596

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.25		2.00	1	10/22/2019 04:28	WG1365724
Barium	483		0.500	1	10/22/2019 04:28	WG1365724
Cadmium	ND		0.500	1	10/22/2019 04:28	WG1365724
Chromium	37.4		1.00	1	10/22/2019 04:28	WG1365724
Copper	34.1		2.00	1	10/22/2019 04:28	WG1365724
Lead	10.7		0.500	1	10/22/2019 04:28	WG1365724
Nickel	22.9		2.00	1	10/22/2019 04:28	WG1365724
Selenium	ND		2.00	1	10/22/2019 04:28	WG1365724
Silver	ND		1.00	1	10/22/2019 04:28	WG1365724
Zinc	98.0		5.00	1	10/22/2019 04:28	WG1365724

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	10/24/2019 08:03	WG1367567
(S) a, a, a-Trifluorotoluene(FID)	93.7		77.0-120		10/24/2019 08:03	WG1367567



Collected date/time: 10/10/19 11:45

L1151275

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/23/2019 21:46	WG1368190
Toluene	ND		0.00500	1	10/23/2019 21:46	WG1368190
Ethylbenzene	ND		0.00250	1	10/23/2019 21:46	WG1368190
Total Xylenes	ND		0.00650	1	10/23/2019 21:46	WG1368190
Methyl tert-butyl ether	ND		0.00100	1	10/23/2019 21:46	WG1368190
(S) Toluene-d8	104		75.0-131		10/23/2019 21:46	WG1368190
(S) 4-Bromofluorobenzene	98.3		67.0-138		10/23/2019 21:46	WG1368190
(S) 1,2-Dichloroethane-d4	103		70.0-130		10/23/2019 21:46	WG1368190

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	211		4.00	1	10/20/2019 20:30	WG1365898
(S) o-Terphenyl	58.1		18.0-148		10/20/2019 20:30	WG1365898

6 Qc

7 Gl

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/21/2019 05:45	WG1366230
Acenaphthene	ND		0.00600	1	10/21/2019 05:45	WG1366230
Acenaphthylene	ND		0.00600	1	10/21/2019 05:45	WG1366230
Benzo(a)anthracene	ND		0.00600	1	10/21/2019 05:45	WG1366230
Benzo(a)pyrene	ND		0.00600	1	10/21/2019 05:45	WG1366230
Benzo(b)fluoranthene	ND		0.00600	1	10/21/2019 05:45	WG1366230
Benzo(g,h,i)perylene	ND		0.00600	1	10/21/2019 05:45	WG1366230
Benzo(k)fluoranthene	ND		0.00600	1	10/21/2019 05:45	WG1366230
Chrysene	ND		0.00600	1	10/21/2019 05:45	WG1366230
Dibenz(a,h)anthracene	ND		0.00600	1	10/21/2019 05:45	WG1366230
Fluoranthene	ND		0.00600	1	10/21/2019 05:45	WG1366230
Fluorene	ND		0.00600	1	10/21/2019 05:45	WG1366230
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/21/2019 05:45	WG1366230
Naphthalene	ND		0.0200	1	10/21/2019 05:45	WG1366230
Phenanthrene	0.0147		0.00600	1	10/21/2019 05:45	WG1366230
Pyrene	0.0117		0.00600	1	10/21/2019 05:45	WG1366230
1-Methylnaphthalene	ND		0.0200	1	10/21/2019 05:45	WG1366230
2-Methylnaphthalene	0.0221		0.0200	1	10/21/2019 05:45	WG1366230
2-Chloronaphthalene	ND		0.0200	1	10/21/2019 05:45	WG1366230
(S) p-Terphenyl-d14	72.0		23.0-120		10/21/2019 05:45	WG1366230
(S) Nitrobenzene-d5	65.3		14.0-149		10/21/2019 05:45	WG1366230
(S) 2-Fluorobiphenyl	64.6		34.0-125		10/21/2019 05:45	WG1366230

8 Al

9 Sc



Method Blank (MB)

(MB) R3462797-1 10/19/19 22:06

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1151275-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1151275-06 10/19/19 22:14 • (DUP) R3462797-7 10/19/19 22:15

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	ND	0.000	1	0.000		20

L1151879-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1151879-07 10/19/19 22:20 • (DUP) R3462797-8 10/19/19 22:21

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3462797-2 10/19/19 22:06

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	24.9	104	80.0-120	

L1151275-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1151275-01 10/19/19 22:07 • (MS) R3462797-3 10/19/19 22:07 • (MSD) R3462797-4 10/19/19 22:08

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chromium,Hexavalent	20.0	ND	14.3	14.0	71.3	70.0	1	75.0-125	J6	J6	1.86	20

L1151275-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1151275-01 10/19/19 22:07 • (MS) R3462797-5 10/19/19 22:09

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	638	ND	536	84.1	50	75.0-125	



Method Blank (MB)

(MB) R3462976-1 10/20/19 23:46

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1151275-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1151275-07 10/20/19 23:47 • (DUP) R3462976-3 10/20/19 23:48

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	ND	0.000	1	0.000		20

L1151945-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1151945-13 10/21/19 00:04 • (DUP) R3462976-6 10/21/19 00:06

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	U	0.000	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3462976-2 10/20/19 23:47

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	24.8	103	80.0-120	

L1151275-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1151275-08 10/20/19 23:49 • (MS) R3462976-4 10/20/19 23:49 • (MSD) R3462976-5 10/20/19 23:49

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chromium,Hexavalent	20.0	ND	19.6	20.3	98.0	102	1	75.0-125			3.62	20

L1151275-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L1151275-08 10/20/19 23:49 • (MS) R3462976-7 10/21/19 00:10

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	716	ND	805	112	50	75.0-125	

L1151263-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1151263-05 10/18/19 16:40 • (DUP) R3462691-3 10/18/19 16:40

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.49	7.48	1	0.134		1

Sample Narrative:
OS: 7.49 at 19.2C
DUP: 7.48 at 18.4C

Laboratory Control Sample (LCS)

(LCS) R3462691-1 10/18/19 16:40

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	9.95	99.5	99.0-101	

Sample Narrative:
LCS: 9.95 at 19.3C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1151275-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1151275-08 10/19/19 23:00 • (DUP) R3462799-2 10/19/19 23:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	9.14	9.15	1	0.109		1

Sample Narrative:
OS: 9.14 at 20.6C
DUP: 9.15 at 20.3C

L1151848-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1151848-04 10/19/19 23:00 • (DUP) R3462799-3 10/19/19 23:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.64	7.54	1	1.32	J3	1

Sample Narrative:
OS: 7.64 at 20.5C
DUP: 7.54 at 20.3C

Laboratory Control Sample (LCS)

(LCS) R3462799-1 10/19/19 23:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.94	99.4	99.0-101	

Sample Narrative:
LCS: 9.94 at 19.9C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3463695-1 10/22/19 15:20

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	umhos/cm		umhos/cm	umhos/cm
Specific Conductance	U		10.0	10.0

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1151275-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1151275-01 10/22/19 15:20 • (DUP) R3463695-3 10/22/19 15:20

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	266	289	1	8.22		20

L1151992-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1151992-02 10/22/19 15:20 • (DUP) R3463695-4 10/22/19 15:20

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	2540	2680	1	5.29		20

Laboratory Control Sample (LCS)

(LCS) R3463695-2 10/22/19 15:20

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	umhos/cm	umhos/cm	%	%	
Specific Conductance	393	391	99.5	85.0-115	



Method Blank (MB)

(MB) R3463397-1 10/21/19 18:51

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.00280	0.0300

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3463397-2 10/21/19 18:53 • (LCSD) R3463397-3 10/21/19 18:55

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Mercury	0.500	0.465	0.458	93.0	91.7	80.0-120			1.44	20

L1151275-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1151275-03 10/21/19 18:57 • (MS) R3463397-4 10/21/19 19:04 • (MSD) R3463397-5 10/21/19 19:06

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Mercury	0.500	ND	0.397	0.438	76.3	84.7	1	75.0-125			9.98	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3463437-1 10/22/19 03:11

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.460	2.00
Barium	U		0.170	0.500
Cadmium	U		0.0700	0.500
Chromium	U		0.140	1.00
Copper	U		0.530	2.00
Lead	U		0.190	0.500
Nickel	U		0.490	2.00
Selenium	U		0.620	2.00
Silver	U		0.120	1.00
Zinc	U		0.590	5.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3463437-2 10/22/19 03:13 • (LCSD) R3463437-3 10/22/19 03:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	100	96.2	95.2	96.2	95.2	80.0-120			1.14	20
Barium	100	105	104	105	104	80.0-120			1.17	20
Cadmium	100	97.4	96.5	97.4	96.5	80.0-120			0.912	20
Chromium	100	102	101	102	101	80.0-120			1.04	20
Copper	100	97.9	97.6	97.9	97.6	80.0-120			0.348	20
Lead	100	99.0	98.2	99.0	98.2	80.0-120			0.858	20
Nickel	100	101	99.9	101	99.9	80.0-120			0.990	20
Selenium	100	96.1	95.0	96.1	95.0	80.0-120			1.17	20
Silver	20.0	18.9	18.7	94.7	93.4	80.0-120			1.35	20
Zinc	100	101	99.3	101	99.3	80.0-120			1.59	20

L1151275-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1151275-03 10/22/19 03:18 • (MS) R3463437-6 10/22/19 03:26 • (MSD) R3463437-7 10/22/19 03:28

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	4.56	90.4	93.5	85.8	88.9	1	75.0-125			3.36	20
Barium	100	242	343	327	100	84.7	1	75.0-125			4.70	20
Cadmium	100	ND	88.2	92.3	88.0	92.1	1	75.0-125			4.55	20
Chromium	100	54.0	141	143	86.6	88.8	1	75.0-125			1.55	20
Copper	100	12.3	101	106	89.2	94.0	1	75.0-125			4.65	20
Lead	100	9.66	100	104	90.6	94.5	1	75.0-125			3.88	20
Nickel	100	25.7	118	121	92.0	95.6	1	75.0-125			3.05	20



L1151275-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1151275-03 10/22/19 03:18 • (MS) R3463437-6 10/22/19 03:26 • (MSD) R3463437-7 10/22/19 03:28

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Selenium	100	ND	86.0	90.6	86.0	90.6	1	75.0-125			5.14	20
Silver	20.0	ND	17.1	18.0	85.5	89.9	1	75.0-125			4.96	20
Zinc	100	40.1	125	129	84.5	88.5	1	75.0-125			3.18	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3464535-1 10/23/19 18:12

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	96.3			77.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3464535-2 10/23/19 20:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.02	91.3	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			103	77.0-120	

L1150667-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150667-07 10/23/19 20:06 • (MS) R3464535-3 10/24/19 08:27 • (MSD) R3464535-4 10/24/19 08:51

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	147	8.81	140	127	88.9	80.0	25	10.0-151			9.76	28
(S) a,a,a-Trifluorotoluene(FID)					102	102		77.0-120				



Method Blank (MB)

(MB) R3464397-2 10/23/19 18:40

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Methyl tert-butyl ether	U		0.000295	0.00100
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	107			75.0-131
(S) 4-Bromofluorobenzene	97.6			67.0-138
(S) 1,2-Dichloroethane-d4	91.6			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3464397-1 10/23/19 17:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.125	100	70.0-123	
Ethylbenzene	0.125	0.116	92.8	74.0-126	
Methyl tert-butyl ether	0.125	0.105	84.0	66.0-132	
Toluene	0.125	0.110	88.0	75.0-121	
Xylenes, Total	0.375	0.305	81.3	72.0-127	
(S) Toluene-d8			103	75.0-131	
(S) 4-Bromofluorobenzene			99.2	67.0-138	
(S) 1,2-Dichloroethane-d4			110	70.0-130	

L1150137-18 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1150137-18 10/23/19 23:09 • (MS) R3464397-3 10/24/19 02:16 • (MSD) R3464397-4 10/24/19 02:36

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	U	0.110	0.118	88.0	94.4	1	10.0-149			7.02	37
Ethylbenzene	0.125	U	0.105	0.115	84.0	92.0	1	10.0-160			9.09	38
Methyl tert-butyl ether	0.125	U	0.0720	0.0717	57.6	57.4	1	11.0-147			0.418	35
Toluene	0.125	U	0.0999	0.109	79.9	87.2	1	10.0-156			8.71	38
Xylenes, Total	0.375	U	0.270	0.298	72.0	79.5	1	10.0-160			9.86	38
(S) Toluene-d8					105	103		75.0-131				
(S) 4-Bromofluorobenzene					97.6	96.6		67.0-138				
(S) 1,2-Dichloroethane-d4					99.9	97.8		70.0-130				



Method Blank (MB)

(MB) R3464509-2 10/23/19 23:55

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Methyl tert-butyl ether	U		0.000295	0.00100
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	103			75.0-131
(S) 4-Bromofluorobenzene	92.8			67.0-138
(S) 1,2-Dichloroethane-d4	111			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3464509-1 10/23/19 22:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.125	100	70.0-123	
Ethylbenzene	0.125	0.118	94.4	74.0-126	
Methyl tert-butyl ether	0.125	0.129	103	66.0-132	
Toluene	0.125	0.0952	76.2	75.0-121	
Xylenes, Total	0.375	0.346	92.3	72.0-127	
(S) Toluene-d8			97.1	75.0-131	
(S) 4-Bromofluorobenzene			95.4	67.0-138	
(S) 1,2-Dichloroethane-d4			121	70.0-130	

L1152349-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1152349-06 10/24/19 06:40 • (MS) R3464509-3 10/24/19 08:37 • (MSD) R3464509-4 10/24/19 08:56

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	U	0.113	0.122	90.4	97.6	1	10.0-149			7.66	37
Ethylbenzene	0.125	U	0.118	0.123	94.4	98.4	1	10.0-160			4.15	38
Methyl tert-butyl ether	0.125	U	0.107	0.115	85.6	92.0	1	11.0-147			7.21	35
Toluene	0.125	U	0.0973	0.101	77.8	80.8	1	10.0-156			3.73	38
Xylenes, Total	0.375	U	0.331	0.367	88.3	97.9	1	10.0-160			10.3	38
(S) Toluene-d8					103	98.9		75.0-131				
(S) 4-Bromofluorobenzene					91.2	93.4		67.0-138				
(S) 1,2-Dichloroethane-d4					103	112		70.0-130				

Method Blank (MB)

(MB) R3463006-1 10/20/19 13:54

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	83.0			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3463006-2 10/20/19 14:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	44.0	88.0	50.0-150	
(S) o-Terphenyl			106	18.0-148	

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3463107-2 10/20/19 23:52

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.000600	0.00600
Acenaphthene	U		0.000600	0.00600
Acenaphthylene	U		0.000600	0.00600
Benzo(a)anthracene	U		0.000600	0.00600
Benzo(a)pyrene	U		0.000600	0.00600
Benzo(b)fluoranthene	U		0.000600	0.00600
Benzo(g,h,i)perylene	U		0.000600	0.00600
Benzo(k)fluoranthene	U		0.000600	0.00600
Chrysene	U		0.000600	0.00600
Dibenz(a,h)anthracene	U		0.000600	0.00600
Fluoranthene	U		0.000600	0.00600
Fluorene	U		0.000600	0.00600
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600
Naphthalene	U		0.00200	0.0200
Phenanthrene	U		0.000600	0.00600
Pyrene	U		0.000600	0.00600
1-Methylnaphthalene	U		0.00200	0.0200
2-Methylnaphthalene	U		0.00200	0.0200
2-Chloronaphthalene	U		0.00200	0.0200
(S) Nitrobenzene-d5	89.4			14.0-149
(S) 2-Fluorobiphenyl	87.3			34.0-125
(S) p-Terphenyl-d14	97.6			23.0-120

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Laboratory Control Sample (LCS)

(LCS) R3463107-1 10/20/19 23:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0720	90.0	50.0-126	
Acenaphthene	0.0800	0.0580	72.5	50.0-120	
Acenaphthylene	0.0800	0.0619	77.4	50.0-120	
Benzo(a)anthracene	0.0800	0.0802	100	45.0-120	
Benzo(a)pyrene	0.0800	0.0651	81.4	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0763	95.4	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0754	94.3	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0758	94.8	49.0-125	
Chrysene	0.0800	0.0762	95.3	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0759	94.9	47.0-125	
Fluoranthene	0.0800	0.0753	94.1	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3463107-1 10/20/19 23:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Fluorene	0.0800	0.0674	84.3	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0774	96.8	46.0-125	
Naphthalene	0.0800	0.0481	60.1	50.0-120	
Phenanthrene	0.0800	0.0714	89.3	47.0-120	
Pyrene	0.0800	0.0770	96.3	43.0-123	
1-Methylnaphthalene	0.0800	0.0549	68.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0559	69.9	50.0-120	
2-Chloronaphthalene	0.0800	0.0570	71.3	50.0-120	
(S) Nitrobenzene-d5			88.2	14.0-149	
(S) 2-Fluorobiphenyl			86.2	34.0-125	
(S) p-Terphenyl-d14			96.3	23.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1151216-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1151216-07 10/21/19 01:15 • (MS) R3463107-3 10/21/19 01:36 • (MSD) R3463107-4 10/21/19 01:57

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Anthracene	0.0800	ND	0.0538	0.0685	67.3	85.6	1	10.0-145			24.0	30
Acenaphthene	0.0800	ND	0.0443	0.0535	55.4	66.9	1	14.0-127			18.8	27
Acenaphthylene	0.0800	ND	0.0443	0.0545	55.4	68.1	1	21.0-124			20.6	25
Benzo(a)anthracene	0.0800	ND	0.0556	0.0770	69.5	96.3	1	10.0-139		J3	32.3	30
Benzo(a)pyrene	0.0800	ND	0.0523	0.0713	65.4	89.1	1	10.0-141			30.7	31
Benzo(b)fluoranthene	0.0800	ND	0.0503	0.0695	62.9	86.9	1	10.0-140			32.1	36
Benzo(g,h,i)perylene	0.0800	ND	0.0509	0.0691	63.6	86.4	1	10.0-140			30.3	33
Benzo(k)fluoranthene	0.0800	ND	0.0488	0.0662	61.0	82.8	1	10.0-137			30.3	31
Chrysene	0.0800	ND	0.0533	0.0710	66.6	88.8	1	10.0-145			28.5	30
Dibenz(a,h)anthracene	0.0800	ND	0.0476	0.0653	59.5	81.6	1	10.0-132		J3	31.4	31
Fluoranthene	0.0800	ND	0.0625	0.0819	78.1	102	1	10.0-153			26.9	33
Fluorene	0.0800	ND	0.0514	0.0638	64.3	79.8	1	11.0-130			21.5	29
Indeno(1,2,3-cd)pyrene	0.0800	ND	0.0496	0.0682	62.0	85.3	1	10.0-137			31.6	32
Naphthalene	0.0800	ND	0.0503	0.0486	62.9	60.8	1	10.0-135			3.44	27
Phenanthrene	0.0800	ND	0.0669	0.0829	83.6	104	1	10.0-144			21.4	31
Pyrene	0.0800	ND	0.0621	0.0813	77.6	102	1	10.0-148			26.8	35
1-Methylnaphthalene	0.0800	ND	0.0400	0.0462	50.0	57.8	1	10.0-142			14.4	28
2-Methylnaphthalene	0.0800	ND	0.0427	0.0479	53.4	59.9	1	10.0-137			11.5	28
2-Chloronaphthalene	0.0800	ND	0.0425	0.0515	53.1	64.4	1	29.0-120			19.1	24
(S) Nitrobenzene-d5					62.4	71.1		14.0-149				
(S) 2-Fluorobiphenyl					59.2	72.3		34.0-125				
(S) p-Terphenyl-d14					58.3	79.3		23.0-120				



Guide to Reading and Understanding Your Laboratory Report

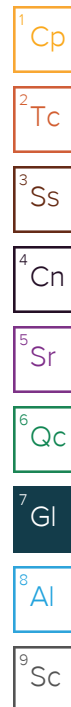
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
T8	Sample(s) received past/too close to holding time expiration.





Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

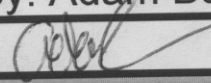
Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.

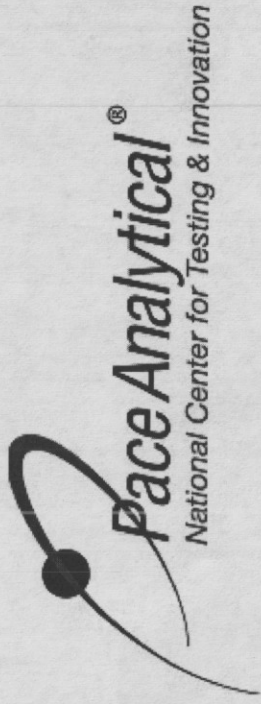


Company Name/Address: Entrada Consulting Group			Billing Information: Laramie Energy			Analysis / Container / Preservative							Chain of Custody Page 1 of 1			
Report to: Stuart Hall			Email To: shall@entradainc.com										 L.A.B S.C.I.E.N.C.E.S YOUR LAB OF CHOICE 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859 			
Project Description: 604-41-32 Release			City/State Collected: DBQ CO										I # L1151215 C115			
Phone: (970) 712-7329		Client Project #		Lab Project #									Acctnum: OXYGJCO			
Fax:													Template:			
Collected by (print): Chance Holder		Site/Facility ID #		P.O. #									Prelogin:			
Collected by (signature): 		Rush? (Lab MUST Be Notified) ____ Same Day200% ____ Next Day100% ____ Two Day50% ____ Three Day25%		Date Results Needed Email? ____ No <input checked="" type="checkbox"/> Yes FAX? <input checked="" type="checkbox"/> No ____ Yes		No. of Cntrs									Cooler:	
Immediately Packed on Ice N ____ Y <input checked="" type="checkbox"/>															Shipped Via:	
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time								Rem./Contaminant	Sample # (lab only)	
20191016 - 604-41-32-BOT1-12"-1005		GRAB	SS	12"	10/16/19	1005	Z	X							-01	
20191016 - 604-41-32-BOT2-12"-1030				12"		1030	Z	X							02	
20191016 - 604-41-32-BOT3-12"-1045				12"		1045	Z	X							03	
20191016 - 604-41-32-BOT4-12"-1200				12"		1200	Z	X							04	
20191016 - 604-41-32-BOTS-12"-1210				12"		1210	Z									
20191016 - 604-41-32-NWALL-8'-10"-1100				8'-10"		1100	Z									
20191016 - 604-41-32-FWALL-8'-10"-1100				8'-10"		1100	Z									
20191016 - 604-41-32-SWALL-8'-10"-1120				8'-10"		1120	Z									
20191016 - 604-41-32-WWALL-8'-10"-1145				8'-10"		1145	Z									
* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____																
Remarks:																
Relinquished by : (Signature)		Date:	Time:	Received by: (Signature)		Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/> _____		Condition: (lab use only)								
Relinquished by : (Signature)		Date:	Time:	Received by: (Signature)		Temp: °C Bottles Received:		RAD SCREEN: <0.5 mR/hr								
Relinquished by : (Signature)		Date:	Time:	Received for lab by: (Signature)		Date: Time:		COC Seal Intact: ____ Y ____ N ____ NA pH Checked: NCF: X								

**Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form**

Client:	0X4GJCO	L1151275	
Cooler Received/Opened On:	10/17/19	Temperature:	2.4
Received By: Adam Burns			
Signature: 			
Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	/		
COC Signed / Accurate?		/	
Bottles arrive intact?		/	
Correct bottles used?		/	
Sufficient volume sent?		/	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

Jeremy W. Watkins



Login #: L1151275	Client: OXYGICO	Date: 10/17/19	Evaluated by: Jeremy
-------------------	-----------------	----------------	----------------------

Non-Conformance (check applicable items)

Sample Integrity	Chain of Custody Clarification	If Broken Container:
Parameter(s) past holding time	<input checked="" type="checkbox"/> Login Clarification Needed	
Temperature not in range	Chain of custody is incomplete	Insufficient packing material around container
Improper container type	Please specify Metals requested.	Insufficient packing material inside cooler
pH not in range.	Please specify TCLP requested.	Improper handling by carrier (FedEx / UPS / Courier)
Insufficient sample volume.	Received additional samples not listed on coc.	Sample was frozen
Sample is biphasic.	Sample ids on containers do not match ids on coc	Container lid not intact
Vials received with headspace.	Trip Blank not received.	If no Chain of Custody:
Broken container	Client did not "X" analysis.	Received by:
Broken container:	Chain of Custody is missing	Date/Time:
Sufficient sample remains		Temp./Cont. Rec./pH:
		Carrier:
		Tracking#

Login Comments: Only the first 4 samples are marked for analysis.

Client informed by:	<input checked="" type="checkbox"/> Call	<input type="checkbox"/> Email	<input type="checkbox"/> Voice Mail	Date: 10/18/19	Time: 1026
TSR Initials: CMW	Client Contact: Stuart Hall				

Login Instructions:

Please log all of the samples.